3701
MOS MONOLITHIC 6-CHANNEL SWITCH
MOS INTEGRATED CIRCUIT

GENERAL DESCRIPTION—The 3701 is a P-channel enhancement mode Monolithic MOS six-channel, single output switch. This device can be used as a basic switching element for airborne or ground instrumentation, telemetry or other signal routing applications.

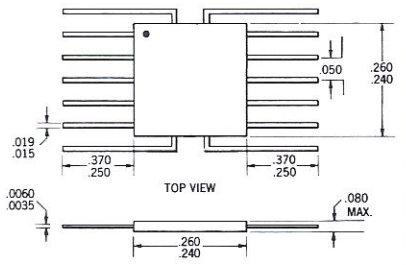
FEATURES

- **GATE PROTECTION**
- **ZERO OFFSET VOLTAGE**
- **LOW LEAKAGE CURRENT**
- **PLANAR*II STABILITY**

ABSOLUTE MAXIMUM RATINGS (Note 1)

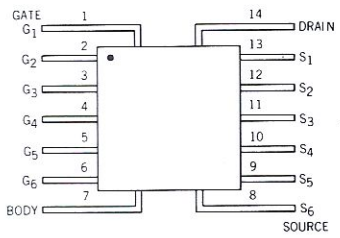
Storage Temperature	−65°C to +150°C
Operating Temperature	−55°C to +85°C
Power Dissipation at +25°C	200 mW
Positive Voltage on any pin ($V_{BODY} = 0$)	+0.3 Volt
Negative Gate Voltage ($V_{BODY} = 0$)	−35 Volts
Negative Source or Drain Voltage ($V_{BODY} = 0$)	−30 Volts

PHYSICAL DIMENSIONS



ORDER PART NO. A3J3701XXX

PIN CONFIGURATION IN 14 PIN CERPAK II



ELECTRICAL CHARACTERISTICS ($V_{BODY} = 0$ Volts, $T_A = +25°C$)

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
r_{on}	Channel On Resistance		300	500	Ω	$V_S = 0$ V, $V_G = -30$ V, $I_D = -100$ μA
r_{off}	Channel Off Resistance	4.0	200		GΩ	$V_D = -20$ V, $V_G = 0$ V, $V_S = 0$ V
$V_{GS(TH)}$	Gate Threshold Voltage	−2.5		−5.5	Volts	$V_S = 0$ V, $V_G = V_D$, $I_D = -10$ μA
I_{SL}	Input Leakage		0.01	1.0	nA	$V_S = -20$ V, $V_D = 0$ V, $V_G = 0$ V
I_{DL}	Output Leakage		0.1	5.0	nA	$V_D = -20$ V, $V_S = 0$ V, $V_G = 0$ V
I_{GL}	Gate Leakage			1.0	nA	$V_G = -20$ V, $V_D = 0$ V, $V_S = 0$ V
C_S	Input Capacitance		4.0		pF	$V_S = 0$ V, $V_D = 0$ V, $V_G = 0$ V
C_D	Output Capacitance		13		pF	$V_S = 0$ V, $V_D = 0$ V, $V_G = 0$ V
C_G	Gate Capacitance		4.0		pF	$V_S = 0$ V, $V_D = 0$ V, $V_G = 0$ V

*Planar is a patented Fairchild process.

NOTE:

(1) These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.

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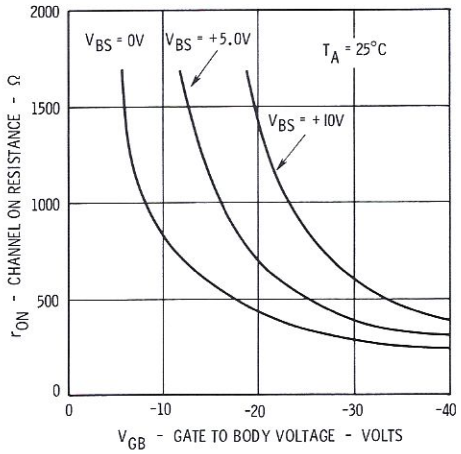
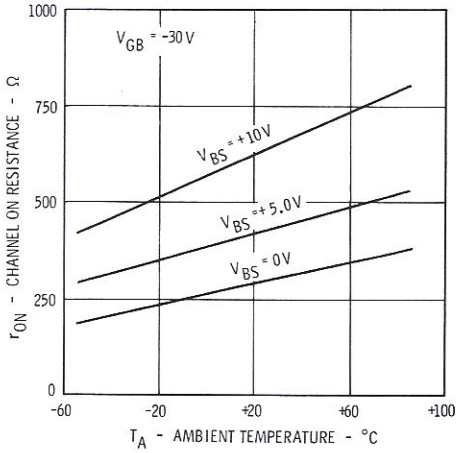
MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 2981877, 3015048, 3025589, 3064167, 3108359, 3117260; OTHER PATENTS PENDING.

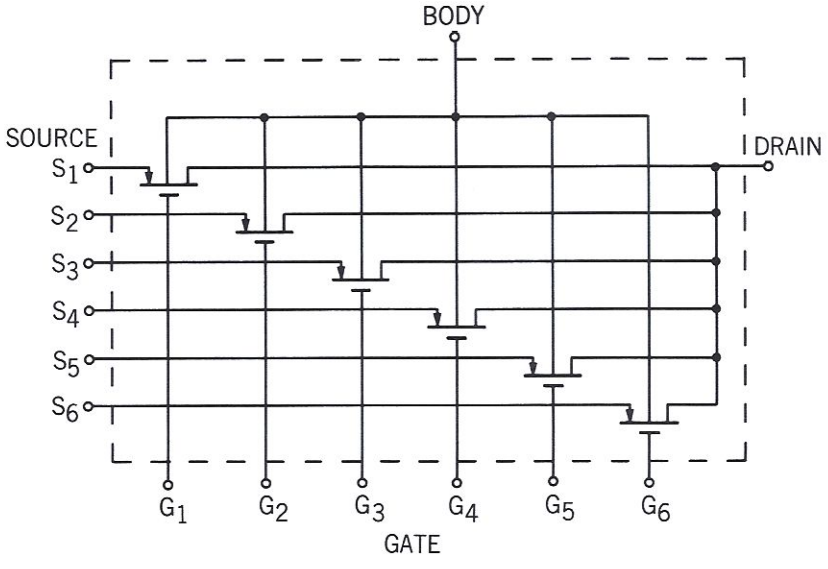
TYPICAL CHANNEL ON RESISTANCE VERSUS GATE TO BODY VOLTAGE WITH BODY TO SOURCE VOLTAGE AS PARAMETER



TYPICAL CHANNEL ON RESISTANCE VERSUS AMBIENT TEMPERATURE WITH BODY TO SOURCE VOLTAGE AS PARAMETER



SCHEMATIC DIAGRAM



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